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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,062	12/28/2000	Paul E. McKenney	BEA9-2000-0013-US1	9320
30011	7590	10/21/2005		
LIEBERMAN & BRANDSDORFER, LLC 802 STILL CREEK LANE GAITHERSBURG, MD 20878			EXAMINER HUYNH, KIM T	
			ART UNIT	PAPER NUMBER
			2112	

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/753,062	Applicant(s) MCKENNEY ET AL.	
	Examiner Kim T. Huynh	Art Unit 2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-31 are rejected under 35 U.S.C. 102(e) as being anticipated by
Kermani (US Patent 6,163,831)

As per claims 1, 13 and 22, Kermani discloses a method for efficiently handling high contention locking in a multiprocessor computer system, comprising:

- organizing at least some of the processors(fig.9, 100-108, ie agents(processors) A and agents(processors) B) into a hierarchy;(col.4, lines 46-57, ie a priority level assigned to each of requesting agents)
- providing a lock selected from the group consisting of an interruptible lock, and a lock which waits using only local memory(fig.9, 200, shared memory); and (col.12, lines 1-15, ie arbiter 920 providing a lock selected from access requesting of agents 100-108)
- processing the lock responsive to the hierarchy. (col.12, lines 16-37, arbiter arbitrates ownership of share memory 200 based on a priority established)

As per claims 2, 14, 25, Kermani discloses wherein the processing step conditionally acquires the lock. (col.11, lines 39-46)

As per claims 3, 15, 26, Kermani discloses wherein the processing step returns a failure to grant the lock if the lock is not immediately available. (col.8, lines 1-15, ie not acknowledge signals implies returns a failure)

As per claims 4, 16, 27, Kermani discloses wherein the processing step unconditionally acquires the lock. (col.5, lines 37-49, wherein without requiring the winning implies unconditionally)

As per claims 5, 17, 28, Kermani discloses wherein the processing step spins on the lock until the lock is available. (col.8, lines 16-24)

As per claims 6, 18, Kermani discloses the method further comprising allowing system interrupts while spinning on the lock. (col.11, line 55-col.12, line 15)

As per claims 7, 19, 29, Kermani discloses wherein the processing step unconditionally releases the lock. (col.12, lines 43-49)

As per claim 8, Kermani discloses wherein the processing step the processors spin on private memory. (col.12, lines 27-37)

As per claim 9, Kermani discloses wherein the hierarchy includes a data structure having a bit mask indicating which processors of a group are waiting for the lock. (col.8, lines 16-24)

As per claim 10, Kermani discloses wherein the hierarchy includes a data structure having a bit mask indicating which groups of processors have processors waiting for the lock. (col.8, lines 1-15, ie agents group A/B)

As per claims 11, 20, 30, Kermani discloses the method further comprising maintaining a release flag for a group of processors to prevent races between acquisition and release of the lock. (col.6, lines 17-30)

As per claims 12, 21, 31, Kermani discloses the method further comprising maintaining a handoff flag for a group of processors to grant the lock to a processor requesting an unconditional lock from a processor requesting a conditional lock. (col.6, lines 5-16)

As per claim 23, Kermani wherein the medium is a recordable data storage medium. (col.12, lines 27-37, ie encoder 190)

As per claim 24, Kermani discloses wherein the medium is a modulated carrier signal. (col.11, lines 39-46, wherein signals to/from system have been modulated/demodulated as for communicating within system)

Response to Amendment

3. Applicant's amendment filed on 8/11/05 have been fully considered but does not place the application in condition for allowance.

a. In response to applicant's argument that there is no provision in Kermani for a lock which waits using only local memory. The requesting processor does not wait for a lock using only local memory, since it is required to wait on the pre-arbiter, which is not local memory. Examiner respectfully disagrees. As Kermani notes at col.11, lines 47-67 discloses the arbiter provides the ability for any agent to lock its ownership of the shared memory(local memory). Furthermore, as Kermani notes at col.4, lines 33-67 further cited for clarification, discloses agents submits its own memory access request signal to

the arbiter, the arbiter will select a winning agent to access the memory. The agents are waiting for a lock to access memory. This is equivalent to applicant's claim languages. Therefore it is properly stated in the rejection of record.

b. In response to applicant's argument that Kermani does not provide support for an interruptible lock as defined by applicant. Even applicant defines an interruptible lock in the specification as interruptible lock is "if the thread is interrupted by an interprocessor interrupt, a hardware, interrupt, etc., while waiting for a lock the thread will be removed from a queue and returned to the queue at a later time in order to gain access to the shared data", the Examiner does not see this supported definition in the claims languages. The Examiner interprets it as broad as possible in light of the specification, the terminology "interruptible lock" as Kermani discloses at col.11, lines 34-54 a requesting locking agent can assume locked ownership of the shared memory at any appropriate time without losing memory cycles. The arbiter intercepts the memory access request signals from each agent and outputs a respective conditioned arbitrated memory access request signal to the arbiter on behalf of the agents. This is equivalent to applicant's claim languages as providing a lock selected from a group consisting of an interruptible lock. It reads on the breadth of the claim languages therefore it is properly stated in the rejection of record.

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9.00AM- 6:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached at (571)272-3676 or via e-mail addressed to [rehana.perveen@uspto.gov].*

The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications and After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.

Kim Huynh

Kim Huynh

October 4, 2005

Kim Huynh
Primary Examiner